Balloon Filling Bottle

Station materials:

- Glass soda bottles (6)
- Vinegar
- Baking soda
- Spoons
- Dry Funnel (Black)
- Wet Funnel (White)
- Balloons
- Paper towels

Station set-up:

- Prep the balloons by adding baking soda (between ½ and 1 tsp using funnel and plastic spoon)
- Add approx. ½ inch of vinegar to each bottle

With the students:

- Each student puts on safety glasses
- Provide each student with a bottle (with vinegar) and a balloon (with baking soda)
- Place the mouth of the balloon over the mouth of the bottle with the baking soda hanging down to the side.
- Once each bottle is set up, have each student lift the balloon to dump the baking soda into the bottle. DO NOT SHAKE THE BOTTLE

Guiding the learning:

This station is done with 6 students at a time, and then needs about 5 minutes to reset for the next round

- Explain to the students that they will be conducting a chemical reaction between vinegar and baking soda
- Ask the students if they know what the “raw ingredients” of a chemical reaction are called (reactants)
- Ask the students how they know that a chemical reaction is occurring (heat, new product, formation of gas)
- Ask the students if they think that the amount of raw ingredients will have an effect on the amount of product
- Have students stretch balloon over the mouth of the bottle, allowing the balloon with the baking soda to hang down on the side
- Tell students that at the count of three, they are to tip the balloon up and empty the baking soda into the bottle
- INSTRUCT THEM TO NOT PICK UP OR SHAKE THE BOTTLE
- Count to three
- Observe the amount of gas produced by the size of the balloon as it fills
- Discuss the variables and any effects they had on the gas produce

Science Talking Points:

- When you combine baking soda and vinegar, they react chemically and produce carbon dioxide gas.
- Different amounts of reactants will produce different amounts of products.
- Baking soda is a solid, vinegar is a liquid, they produce a gas.
- Gasses spread out to take the volume of their container.